Volunteer Firemen

Professional Journal of the Volunteer Firemen's Section of the National Fire Protection Association

Volume 1, Number 11 **BOSTON, MASSACHUSETTS** **August, 1934**

The burning of a gasoline distributing plant near Jamestown, N. Y., on June 18, 1934. Seven men were burned to death and many injured when two gasoline tanks (wreckage in foreground) exploded during the fire, due to inadequate vents.

Gasoline Fire Fatal to Firemen

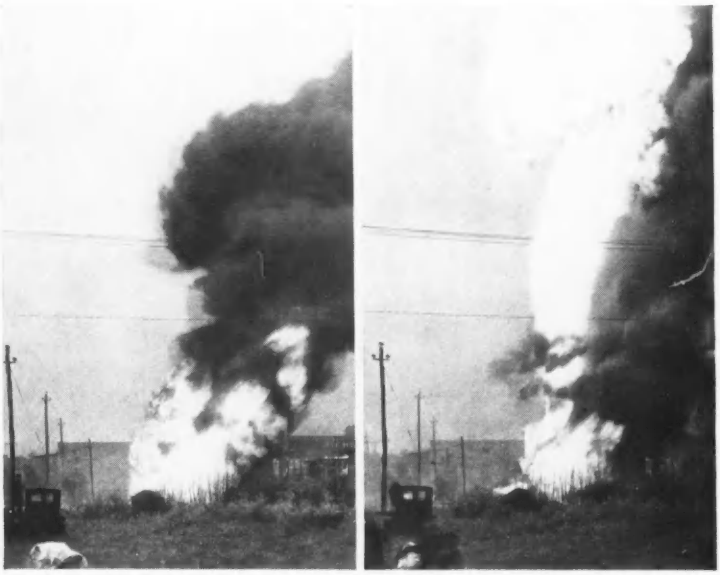
Tanks of Bulk Storage Plant Near Jamestown, N. Y., Protected by Volunteers, Blow Up During Fire

ON June 18, 1934, four firemen and three spectators were burned to death and a large number of both were injured when two gasoline storage tanks exploded during a fire at a gasoline distributing plant just outside the city limits of Jamestown, New York.

The plant in which these casualties occurred was in a territory protected by a volunteer fire company. Nearly every community, even many very small ones, may have one or more such plants at which gasoline is stored and from which it is distributed to the roadside filling stations from which the automobilist gets his supply. Almost any volunteer company, therefore, is likely to be up against the conditions which faced the Fluvanna Fire Company and the fire department of the city of Jamestown. The fire was an important one in that it showed the significance in terms of safety to life of the various details of the installation of the tanks and the arrangement of the plant.

The property involved in this fire is shown in the accompanying diagram. There were two 20,000-gallon horizontal tanks 10 ft. in diameter and 35 ft. long, with a third tank half this size and a small pump house between them. The tanks were constructed of steel of adequate thickness, and were supported on concrete cradles about one foot above the ground.

About three o'clock in the afternoon a tank truck driver was filling his truck with gasoline from the storage tanks. He had just filled one compartment and changed the valves to fill another with ethyl gasoline. He then reached through the window of the pump house to throw the electric switch to start pumping and was knocked down by a mild explosion. He ran to the main building and took



Left: At 4:50 P.M. an attempt was made to relieve the pressure in the north 20,000-gallon tank by puncturing the head with a high powered police rifle fired from the truck at the left of this picture. Right: Two minutes later the manhole blew off.

a chemical extinguisher back to the fire, but saw that its use would be futile. After yelling "Fire" he drove his truck away from the fire.

Jamestown companies were first called and responded. One was equipped with chemical tank and hose, and the other was a ladder truck carrying a foam generator and six cans of foam powder. The companies connected to a hydrant which was just inside the city line and over 300 ft. from the fire. One water stream was played on the pump house, and another line was connected to the foam generator. Foam was fed on the burning gasoline between the tanks by carrying the foam line over one of the large tanks on a ladder.

Meanwhile a 1,000-gallon pumper from Jamestown and the 500-gallon pumper of the Fluvanna Volunteer Company had arrived and were pumping water from the river near by. By this time the foam line had been withdrawn because the burning gasoline was spreading under the tanks, and four water streams from the river, manned by four men each, were directed to the cooling of the tanks to prevent explosion.

Apparently the original puff broke a connection in the pump house, which supplied the fuel for the fire by syphoning the contents from one of the tanks. As the heat increased, the pressure in the tanks increased, forcing out more fuel for the fire. The vents in the tops of the tanks were not large enough to relieve the pressure inside.

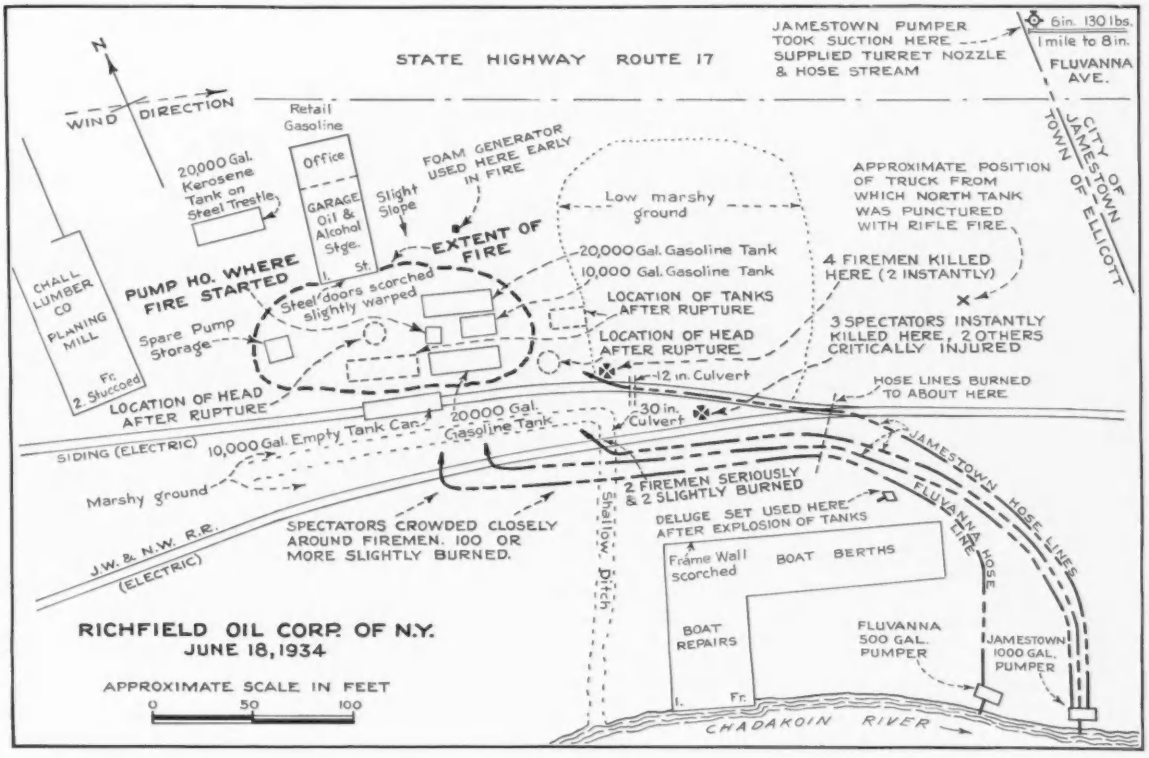
Meanwhile a large crowd of sightseers was blocking traffic and crowding closer and closer to the fire. Jamestown policemen, deputy sheriffs, and volunteer firemen were unsuccessful in keeping the people from the danger zone. Just as Chief Beatty of Jamestown was about to give orders to turn one of the hose streams on the crowd, the center tank exploded from internal pressure, throwing one head 40 ft. and the other head and shell 45 ft. in the opposite direction.

Fifteen seconds later the second tank ruptured in a similar manner. Although the firemen manning the lines and the onlookers attempted to run after the first explosion, the second explosion followed the first so quickly that they were enveloped in a wave of blazing gasoline. All four firemen manning one line and three onlookers were burned to death. Twenty-nine persons, including the Chief of the Jamestown Fire Department, were taken to hospitals and hundreds were treated for burns at the scene. Two firemen are still on the danger list, and two onlookers are not expected to live.

The fire continued to burn fiercely. A second pumper from Jamestown was brought into action. Two lines siamesed to a deluge set and a turret nozzle on the ladder truck were used to attack the fire.

Afraid that the third tank would explode, the police department was called upon to relieve the pressure in this tank. Using high powered rifles, 33 bullet holes of about ¼ in. in diameter were made in the head of the tank. Evidently this was not enough to relieve the pressure, for two minutes later the entire manhole blew off, sending up a column of flames.

One end of the 20,000-gallon tank, bulged from the heat and pressure but not ruptured, with broken suction pipe at the top. Beyond is the shell of the other 20,000-gallon tank, blown 40 ft. from its original position.


N
STATE HIGHWAY ROUTE 17
JAMESTOWN PUMPER TOOK SUCTION HERE SUPPLIED TURRET NOZZLE & HOSE STREAM
6 in. 130 lbs. 1 mile to 8 in.
FLUVANNA AVE.
CITY OF JAMESTOWN
TOWN OF ELLICOTT
WIND DIRECTION
Retail Gasoline
Office
GARAGE Oil & Alcohol Stge.
20,000 Gal. Kerosene Tank on Steel Trestle
FOAM GENERATOR USED HERE EARLY IN FIRE
Slight Slope
EXTENT OF FIRE
PUMP HO. WHERE FIRE STARTED
Steel doors scorched slightly warped
CHALL LUMBER CO PLANING MILL
Spare Pump Storage
Fr. 2 Stuccoed
LOCATION OF HEAD AFTER RUPTURE
Low marshy ground
20,000 Gal. Gasoline Tank
10,000 Gal. Gasoline Tank
LOCATION OF TANKS AFTER RUPTURE
LOCATION OF HEAD AFTER RUPTURE
APPROXIMATE POSITION OF TRUCK FROM WHICH NORTH TANK WAS PUNCTURED WITH RIFLE FIRE
4 FIREMEN KILLED HERE (2 INSTANTLY)
3 SPECTATORS INSTANTLY KILLED HERE, 2 OTHERS CRITICALLY INJURED
12 in. Culvert
30 in. Culvert
HOSE LINES BURNED TO ABOUT HERE
SIDING (ELECTRIC)
10,000 Gal. Empty Tank Car
20,000 Gal. Gasoline Tank
Marshy ground
2 FIREMEN SERIOUSLY & 2 SLIGHTLY BURNED
DELUGE SET USED HERE AFTER EXPLOSION OF TANKS
JAMESTOWN HOSE LINES
FLUVANNA HOSE LINE
J.W. & N.W. R.R. (ELECTRIC)
SPECTATORS CROWDED CLOSELY AROUND FIREMEN. 100 OR MORE SLIGHTLY BURNED.
Shallow Ditch
Frame Wall scorched
BOAT BERTHS
BOAT REPAIRS
FLUVANNA 500 GAL. PUMPER
JAMESTOWN 1000 GAL. PUMPER
Fr.
CHADAKOIN RIVER
RICHFIELD OIL CORP. OF N.Y.
JUNE 18, 1934
APPROXIMATE SCALE IN FEET
0 50 100

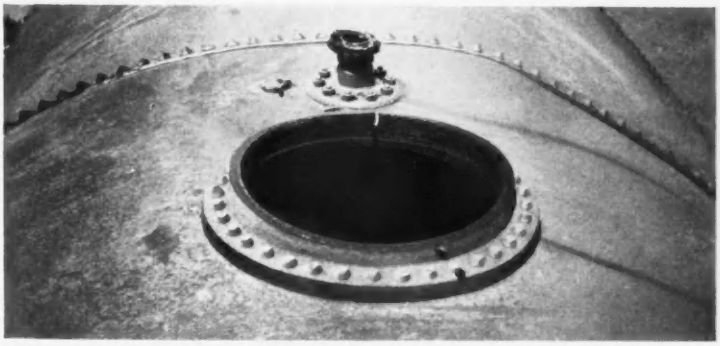
This fire teaches some important lessons. It apparently started in the pump house from ordinary electrical equipment which was not spark proof and therefore not suitable for use in the presence of flammable vapors.

All three tanks had tightly bolted manhole covers, and a gauge hatch of a type which affords a two-inch vent to relieve internal pressure. No other emergency venting facilities were noted in an examination of the tanks after the fire. According to the N.F.P.A. Flammable Liquids Ordinance, about a 5½-in. vent is required in tanks of this size to limit the pressure to one pound per sq. in., a safe pressure for ordinary horizontal tanks.

Where gasoline or oil tanks are heated by fire under them, as in this case, pressure is generated as in a steam boiler. If the vents are not large enough to discharge the vapor as it is formed, and there is nothing to serve as a safety valve, the pressure will increase until something gives way. Unless a tank is specially designed to withstand pressure, with bulged ends, the ends will give away first. Thus it is much safer to approach such tanks from the side.

Vertical tanks seldom explode. If vents are too small and pressure is generated the top usually lifts. This may release a quantity of gasoline vapor to burn in the air above the tank, but this is obviously less dangerous than burning liquid gasoline thrown out along the ground.

If burning gasoline tanks can be sufficiently cooled by hose streams, explosions can be prevented. But it takes a lot of water to do much good in a fire as severe as this. Streams should be directed to cool the sides and bottom of tank where the fire is, instead of applying the streams at the top.



Manhole and gauge hatch of the 20,000-gallon tank that bulged but did not rupture.

The above account is based on a report by R. W. Gieseler (Member N.F.P.A.), made available through the courtesy of the Eastern Underwriters Inspection Bureau.

Qualifications of Volunteers

By **Clem Smith,** *Chief, Fire Marshal Department, State Department of Public Safety, Indiana*

OF 408 cities and towns in Indiana that have some form of fire protection, only 55 cities have paid fire departments. This leaves 350 towns solely dependent upon volunteer firemen for fire protection. In other words, the safeguarding against fire of the lives and property of over one million people in Indiana is in the hands of volunteers.

Because of this tremendous responsibility placed upon volunteer firemen throughout the country, I want to emphasize the importance of a well-organized volunteer fire company composed of men that are especially qualified for fire duty as the first essential for an effective unit for fire prevention and protection. In my estimation several distinct and necessary qualifications need to be considered in determining whether or not a volunteer fire department is properly manned.

First of all there should be "discipline." By that I mean men who stand ready to obey orders given by those responsible for the performance of the members of the fire company.

"Honor" is an essential qualification of a volunteer fireman. Men should be selected as firemen who consider it an honor to serve their city as a volunteer. A volunteer fireman should look upon his duties with the same valor as the soldier on the field of battle. The real worth of a volunteer fireman lies in the performance of his duties and remuneration for services is the last object to be considered.

"Intelligence" is a matter of serious consideration because an intelligent man can readily grasp the importance of obedience and honor in the performance of his prescribed duties. He can be well trained and educated in the profession of a fireman, and can usually be relied upon by his superior officers in carrying out his part of the program in the event of fire.

"Availability" is another objective in the selection of the volunteer. He should reside, if possible, within easy access to the place where the fire-fighting equipment is kept.

In organizing a volunteer fire department, a good competent man should be selected as chief. Careful note should be made as to his qualifications and temperament. Then too, the various officers under the chief should be selected because of their special fitness to perform their assigned duties. All the men of the company should receive training so that they can perform these duties in a capable manner.

Responsibilities of the chief are numerous. He should institute a building inspection system, especially in the business districts. The chief should be the community leader in fire prevention education activities, such as Fire Prevention Week. He should sponsor fire drills in schools.

With the organization of an efficient volunteer fire department a feeling will arise among the citizens that their city is well protected, and naturally the firemen will meet with ready response for any assistance they may ask for. Better equipment will be purchased when efficiency is shown. Better days for volunteer firemen are sure to follow, with compensation for services rendered and protection against injury or death in the line of duty.

The above article is digested from a paper by Mr. Smith, read before the convention of the Indiana Section of the American Water Works Association at West Lafayette, Ind.

A hose wagon of the type used in small watch-stations in outlying districts of cities in Finland. Finland has 14 permanent and 200 volunteer fire departments. Several cities and towns that have permanent departments also have volunteer reserve brigades.

Fire Loss Last Year Lowest Since 1916

THE total fire loss in 1933, as estimated by the National Board of Fire Underwriters, was $269,778,480. This is the smallest since 1916, and about one-third less than the 1932 loss.

This makes a per capita loss of $2.15 for the country as a whole. The loss in cities of 20,000 population and over is 28.8% of the total loss for the country, which makes an average per capita loss of $1.51 for these cities. These figures above indicate that the largest per capita losses are in the smaller communities and rural districts rather than in the large urban centers. This should be a challenge to small city and town authorities to better their fire prevention and fire protection facilities.

Canadian fire losses in 1933 amounted to $32,676,314. This makes a per capita loss of $3.15, as compared with $4.06 for 1932.

According to the N.F.P.A. Department of Fire Record there were fewer than normal large loss fires (those of over one-quarter million dollars loss each) in 1933. Several of the biggest fires were handled by volunteers and have been reported in previous issues of VOLUNTEER FIREMEN.

Although the loss per fire dropped from $325 in 1932 to $230 in 1933, the total number of fires dropped only 3½ per cent. This indicates that while fire departments have done good work in fighting fires, better work needs to be done in preventing fires. Volunteer departments are helping prevent fires by securing the cooperation of the people in their communities and eliminating fire hazards.

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An Easy Way to See How Fire Acts

KNOWLEDGE of the action of fire is the basis of all fire fighting operations, according to Deputy Chief H. W. Hutchins, Jr., of the Somerville, Mass., Fire Department. Chief Hutchins is an instructor in the regional fire schools in Massachusetts and is President of the Massachusetts Fire Department Instructors Association, and the following statement is taken from an introductory lecture he has prepared on fire fighting. Chief Hutchins states:

"An understanding of certain principles explains the reason for actions taken at fires or the reason for precautions taken under certain conditions. A knowledge of how fire will act under various conditions, how it will travel, and what will facilitate its spread, is necessary to the understanding of the means necessary to check and extinguish a fire.

"The simplest method of observing the action of fire is to study the operation of an ordinary stove. This will show that fuel to burn and air to support the combustion are necessary. Air is supplied from below and the fire burns rapidly. Fire, heat and smoke naturally rise in a vertical direction. The fire, heat and smoke follow the path of least resistance, as up through an open chimney. As the draft is increased or the vertical height of the chimney is increased, it is observed that the spread of the fire increases. As the inside area of a chimney or flue is decreased by means of a damper or other obstruction, the speed of the fire is decreased and the upward passage of smoke and heat is restricted. The closing of the damper will force smoke, heat and gases of combustion downward and outward through the doors or other openings of the stove.

"These actions of fire in a stove may be compared directly with the action of a fire in a building. For example, a fire originates in the first story. It feeds on the drafts of air received from below. The fire, heat and smoke follow the path of least resist-

Blackinton.

The burning of a small farm dwelling. 1. Soon after the start of the fire. 2. Wooden shingle roof involved. 3. At this point fire department arrived. 4. Fire department in action. 5. Good hose stream, but too late to save building. 6. Fire out, twenty minutes after start.

"Mice and matches" has been put down as the cause of many a fire where someone was too lazy to investigate carefully. Here's an actual case, however. Mice started this fire in a roll-top desk, but it burned itself out for lack of air because the desk was closed.

ance upward, that is, the vertical arteries such as stairways and shafts, which correspond to a chimney. If this path is obstructed by a skylight, scuttle or bulkhead, the heat, fire and smoke are forced first horizontally and then downward."

German Dictatorship Provides 2,000,000 Firemen

IN a democratic form of government such as we have in this country we must sacrifice efficiency somewhat for the sake of the freedom which comes to a self-governing people. Dictatorships make for efficient if not always fair and just governments.

In the fire service Germany is apparently getting an efficient fire organization under its present dictatorship, and while we are not arguing for such an arrangement in this country, the following account from the official magazine of the British fire service as to what is taking place in Germany is interesting:

"About two years ago President Von Hindenburg appointed a professional fire brigade officer to report on the fire defenses of Germany. On January 1 legislation based on that officer's recommendation came into force. Among its provisions are:

1. Every community, rural or urban, must have an adequate fire brigade.
2. Every town with a population of more than 100,000 must have an entirely professional fire brigade, the personnel of which can be speedily re-enforced.
3. Every local authority must provide sufficient and efficient fire appliances, gas defense apparatus, fire alarm system and water supply with pressures suitable for fire extinction purposes.
4. The services of all fire brigades, municipal and private, to be coordinated.
5. Every male German, between the ages of 15 and 55 to 60, is liable for service with a fire department and to the performance of 12 drills a year. Penalties can be imposed on all who fail to become efficient.

"Owners of large buildings, whether commercial or residential, must form private fire brigades and provide efficient and adequate apparatus.

"This conscription for fire defense has been received with acclamation by the younger men. In April last, Germany had more than 2,000,000 firemen, and this number has since been increased."

What Farmer Can Do for His Own Protection

PEOPLE who live in the country should at least arrange to have some means for taking care of small fires, in the opinion of Judge J. E. Florin (Member N.F.P.A.), Superintendent of Fire Prevention of the Industrial Commission of Wisconsin.

"Even with reasonably safe conditions, good housekeeping and proper care," says Judge Florin, "some fires are likely to occur. The farmer must be prepared to fight these when they are small. When fires are just starting a good fire extinguisher or a pail of water may be more effective than a whole fire department later on. No farm should be without a ladder long enough to reach the roof, so that the tiny spark on the shingle roof may be extinguished. Such ladders often are needed to rescue persons trapped in upstairs rooms.

"For extinguishing incipient fires in the residence and the stock barn or other buildings in which the temperature is kept above 40° F. at all times, the soda-acid extinguisher of two and one-half gallon capacity will give the best service. In haylofts, granaries and other non-heated buildings, the contents of the soda-acid extinguisher would freeze. In such places it is best

to install the small pump type extinguisher filled with carbon tetrachloride, which will not freeze in any ordinary temperature.

"A covered barrel of water with about 75 pounds of salt to keep the water from freezing may be installed in the hayloft and granary.

"On larger farms with an extensive set of buildings, a chemical extinguisher on wheels and of about forty gallons capacity should be installed and kept in a heated building.

"Where hand fire extinguishers are quite generally installed by farmers in any neighborhood a telephone fire signal can be agreed upon, and when the call comes neighbors with their extinguishers can go to the assistance of their unfortunate neighbor who has a fire."

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Bird Addicts To "The Weed"

CHIEF JOHNSON of Knoxville, Tennessee, not long ago reported several cases he had observed of fires the only plausible cause of which appeared to be that birds had carried cigarettes to their nests. Chief Johnson's experience is not an isolated case. In Rockwood, Iowa, an old abandoned theatre was destroyed in a fire which originated at a point where sparrows had made their nests. Neighbors, sitting across the street, had often seen the birds pick up discarded cigarettes, still burning, and carry them away.

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A Flammable Hose Stream

IF you turned a hose stream on a fire and found that it only added fuel to the flames you'd be considerably surprised. That's what happened to the firemen in Bluefield, West Virginia, while they were fighting a fire in a mercantile establishment. Investigation showed that someone had poured three or four gallons of coal tar into the fire hydrant. When this was fed to the flames, along with the water, it produced a dense volume of smoke which greatly hampered the fire fighting. The State Fire Marshal and local authorities are continuing the investigation to apprehend the person responsible.

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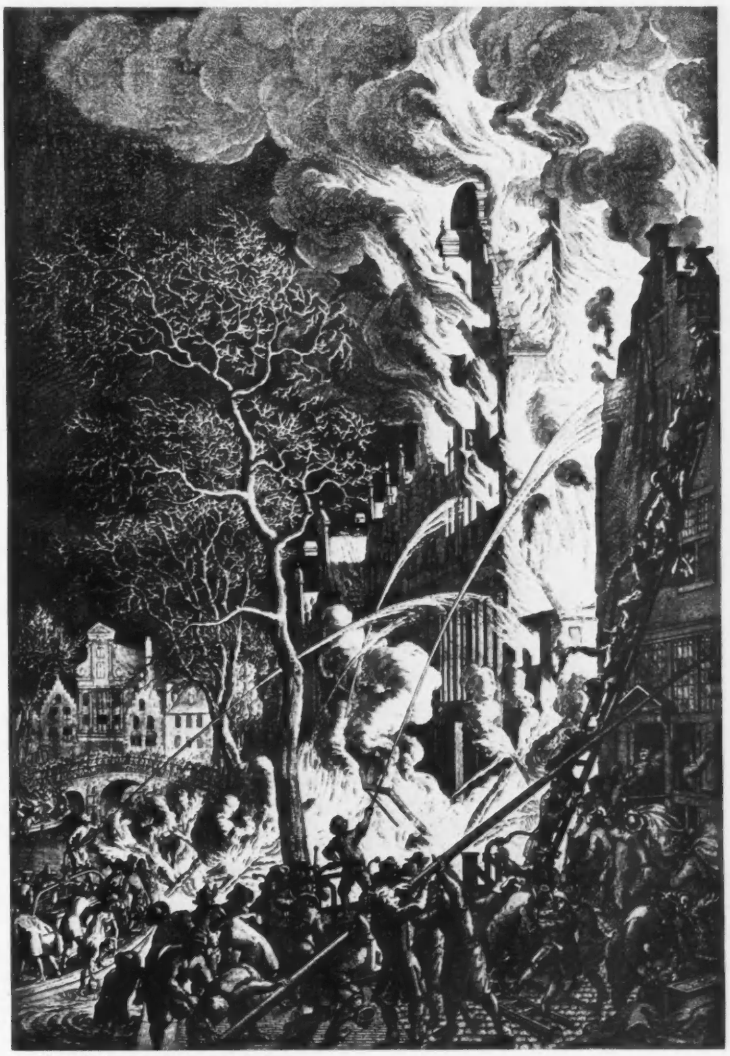
Firemen Do Answer Bee Alarms

BILL HOLMAN's cartoon in the advertisement of the Texas Company in the April issue is more true to life than many of our readers may suspect who had a laugh at Ed Wynn and his crew coming back from a bee alarm all stung up. The fire department in Washington, D. C., used to send an engine company out to wrestle with the problem of what to do with a swarm of bees until they found that fireman S. Pope of Engine Company No. 6 was a bee expert. Since last summer Pope has been responding to bee alarms, and he seems to know what to do about them, because so far he has captured 24 swarms, and the rest of the firemen do not have to take the bumps.



New York Underwriters' Insurance Company.

An old Dutch print showing a fire occurring on December 29, 1669. Engraved in Amsterdam in 1690. (The original print was loaned for reproduction from the collection of Simon Brentano of New York.)

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Company Meetings The success or failure of volunteer fire company meetings depends largely upon how well these meetings are planned and conducted. This, of course, varies widely among companies. Some follow parliamentary rules of order, and in others any man may speak just about when he pleases. Without a doubt companies that have definitely planned programs of interesting topics for discussion have the higher average of attendance and the most alert firemen.

Problems and topics for discussion at business meetings should be outlined beforehand in order to keep members interested. A number of volunteer fire companies have informed us that they are using material in VOLUNTEER FIREMEN as the basis for discussions in their meetings. Various articles in the magazine are assigned to certain members to lead a discussion on that subject at the next meeting.

Know Your Fire Hazards Volunteer firemen are called upon to fight a variety of hazardous fires. Many of these fires are as complicated and dangerous as those that paid firemen in the largest cities have to cope with, even if less frequent.

The account in this issue of the exciting, but tragic, gasoline fire and explosion near Jamestown, New York, is a typical example of the dangerous fires that volunteers are facing. Without a thorough knowledge of what is happening or likely to happen during fires of this type, the lives of firemen and onlookers are seriously in danger.

It may be too much to expect every volunteer fireman to know exactly what kind of electric switch should be used on a gasoline-pump motor, and what size vent a certain kind of gasoline storage tank should have to be safe from an explosion. However, the volunteer company should make sure that the accepted standards of safety for hazardous devices and equipment are followed. There may be a member of the company or department with technical background to enable him to check up on the special fire hazards in the district protected by the company. There is always the insurance inspection department having jurisdiction, with competent engineers who may be consulted, and in many states and provinces the Fire Marshal's Department can help.

Studying the possibility of fires which can take place in hazardous plants or businesses is worth while. Then if the fires do occur, they can be fought more effectively and with less danger to life.

List the "Target Fire Hazards" As a practical method of studying the danger spots of your community, begin by making a list of them. Among these "target fire hazards" should be placed all buildings and locations where a large fire can occur. You will put down manufacturing plants, lumber yards, oil storage plants and other places where combustible material is concentrated. Also on the list should be schools, public buildings, institutions, hospitals and such structures which may be so constructed that they may be completely destroyed in a fire.

Attend Your Fire School Fire schools are being held this summer in all parts of the country. The schools planned in the U. S. were listed by states in the April issue.

The number of, and interest in, fire schools has been increasing rapidly in the last few years. Over 20,000 volunteer firemen will take part in the activities of these schools being held during the summer.

If you are not familiar with schools planned in your territory, detailed information may be obtained by writing to the State or Provincial Firemen's Association, Fire Chiefs' Association, Fire Marshal, the local insurance inspection department, State University, or State Vocational Training Department. All these agencies are coöperating in various territories.

Your company members shouldn't turn down an opportunity to attend the nearest school.

New Members During the Month In spite of the general practice of a majority of volunteer companies and departments to hold no business meetings during the summer, applications continue to come in for membership in the Volunteer Firemen's Section from companies and departments in all parts of the country. Since the last issue of VOLUNTEER FIREMEN the following ten companies with 184 members have come in, making the total membership of the section to date 6,199.

Dinuba Volunteer Fire Department, Dinuba, California.

Union Fire Company, Millstadt, Illinois.

Mount Hope Finishing Company, Fire Brigade, North Dighton, Mass.

Truro Fire Department, South Truro, Massachusetts.

Wheaton Fire Department, Wheaton, Minnesota.

Ralston Volunteer Fire Department, Ralston, Nebraska.

Clayton Fire Department, Clayton, New Mexico.

Stewart Manor Fire Department, Stewart Manor, New York.

Cushing Volunteer Fire Department, Cushing, Oklahoma.

West End Fire Company No. 3, Phoenixville, Pennsylvania.

Pyrene Prize Letter Contest

This Month's Awards for Best Letters on Fires Put Out With Fire Extinguishers

First Prize—$10.00

JOHN J. FAIRCHILD,
Fire Department, Belchertown, Mass.

Saves Home in Forest Fire

"In the spring of 1922, while I was chief, we were called upon to fight a forest fire in an outlying section of the town. We had very little fire fighting equipment besides six 2½-gallon soda-acid extinguishers. Upon our arrival we found that a dwelling house had caught fire. The flames had eaten through the door and two windows, filling the room with fire.

"Two extinguishers put the fire out in the room, two more did the same to the outside, and one put out the fire under the floor. The sixth and last extinguisher was not used at the time, being held in reserve in case of another outbreak.

"I doubt that this job required over five minutes, but the work accomplished with those five extinguishers made a lasting impression on me."

Second Prize—$3.00

H. D. FLANAGAN, Chief,
Volunteer Fire Dept., Pleasant City, Ohio.

A $250,000 Coal Mine Saved

"A few years ago our department was called to extinguish a fire in a coal mine where 375 men were employed. The miners had been fighting the blaze with water, "bug dust" (cuttings of coal by machines), and other smothering methods for eight hours, but with a losing fight.

"My brother took a 2½-gallon soda-acid extinguisher and a gallon of acid and case of soda down the 120-foot shaft. After going about three-quarters of a mile underground, he found a regular inferno. He directed the contents of the extinguisher on the blaze. With the help of another man to supply him with water he recharged the extinguisher as soon as it was exhausted, time after time. After forty minutes, to the astonishment of all, he had the fire extinguished.

"The superintendent gave orders that all his mines be equipped with this kind of extinguisher, and gave my brother a new suit for his services."

Third Prize—$2.00

LEVIO JOSEPH RAFFAELLI,
Fire Dept., So. San Francisco, Calif.

Fifty-three People in Bus Fire

"When a large bus stopped at the foot of the driveway leading to our fire station, I noticed smoke coming from the driver's compartment. The driver of the bus was motioning frantically for assistance. I immediately got the carbon tetrachloride extinguisher which we carry on our apparatus and ran down the driveway to the burning bus.

"I soon discovered that a short in a switch in the driver's compartment had set near-by combustible material on fire. I notified the people (there were 53) in the bus that there was no immediate danger. I applied the extinguisher and soon had the fire under control. At the driver's request I rode along with him and continued to apply the carbon tetrachloride to the burnt parts until the bus reached its destination."

Honorable Mention

HENRY J. ERICKSON, Chief,
Volunteer Fire Dept., Sanish, N. D.

GEO. L. MISTELE, Chief,
Volunteer Fire Dept., Rodney, Ont., Can.

J. R. STULYZ,
Garland Fire Dept., Garland, Tex.

SEND your story of how an approved fire extinguisher of any make has been used to save life or property and get in line for an award next month for one of the cash prizes being offered in this contest coöperatively by the Pyrene Manufacturing Company of Newark, N. J., and VOLUNTEER FIREMEN. Until further notice the following cash prizes will be awarded each month: First Prize, $10.00; Second Prize, $3.00; Third Prize, $2.00. The contest will be judged by the engineering staff of the National Fire Protection Association and the editors of VOLUNTEER FIREMEN.

CONTEST RULES

1. Only members of a volunteer fire department may compete in the Pyrene Prize Letter Contest.
2. Letters are to describe actual experiences where any approved fire extinguisher of any make has saved lives or property.
3. Trade names may be used but will be deleted in publication. Publishers reserve the right to edit winning letters to permit publication.
4. Each contestant automatically vouches for the truth of the facts presented from his own or others' experiences.
5. Only one letter may be submitted each month.
6. Letters must be legibly written in ink or typewritten on white paper, one side only. Preference will be given to letters not over 250 words in length.
7. Letters received after the 20th of the month will be judged in following month's competition.
8. Monthly prizes in cash will be: 1st, $10.00; 2nd, $3.00, and 3rd, $2.00.
9. Address contest letter to Pyrene Prize Letter Contest, National Fire Protection Association, 60 Batterymarch Street, Boston, Mass.

MEMBERSHIP PLAN

Volunteer Firemen's Section National Fire Protection Association

WHERE twenty or more firemen in a volunteer company or department affiliate with the Volunteer Firemen's Section the cost is 50 cents a year *per man*. Each fireman will receive one copy of VOLUNTEER FIREMEN, the monthly journal of the Volunteer Firemen's Section, mailed regularly to his home address. The company or department automatically becomes a member of the National Fire Protection Association and is entitled to full privileges of membership. All the literature regularly issued to N.F.P.A. members is mailed to headquarters of the company or department.

Membership may be applied for by one member of the company or department collecting 50 cents for each of the 20 or more members and making a single remittance for the group, or the company or department may take a membership for its men and make a single remittance from the company or department treasury.

Companies of Less Than Twenty

Because of the large amount of material mailed to members, not less than $10.00 can be accepted from any company or department for membership dues. In the case of companies or departments with less than twenty men this means that the cost divided among them will be slightly higher per man. Of course, some such companies or departments may prefer to make a single remittance of $10.00 from the company or department treasury. In other cases a few interested citizens, not members of the company or department, may be glad to contribute 50 cents apiece to make up the required minimum of twenty, so that the members may secure the rate of 50 cents per man.

These companies or departments have full privileges of N.F.P.A. membership as above and each member receives the monthly magazine, VOLUNTEER FIREMEN, at his home.

In the JULY QUARTERLY

Volunteer companies or departments members of the Volunteer Firemen's Section receive the QUARTERLY *at company headquarters in addition to* VOLUNTEER FIREMEN, *which each member receives at his home address by reason of membership in the Section.*

Fighting Transformer Fires

How best to handle fires in electric transformers and oil circuit breakers, by two engineers of electric power companies. This paper won a prize of the National Electric Light Association and the Edison Electric Institute.

Chicago Stockyard Fire

Full details of the biggest fire this year, the $6,000,000 fire in May in the property of the Union Stock Yard and Transit Company, Chicago. Of the 31 fire departments sending aid to Chicago, 19 were volunteer departments.

Buffalo Dust Explosion

Report giving complete details of the $80,000 dust explosion at the Kreiner Malt Company, Buffalo, N. Y., in which a fire captain and a civilian were killed and fourteen firemen injured. The report is by Dr. D. J. Price of the U. S. Department of Agriculture and Chairman of the N.F.P.A. Committee on Dust Explosion Hazards.

Fire Records

Latest fire loss figures for the U. S. and Canada, including losses of the principal cities.

1934 Annual Tabulation of Fires in Which There Was Loss of Life.

Fire Record of Vacant and Idle Property.

Also other articles and special features.

EXECUTIVE OFFICE
National Fire
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60 Batterymarch St., Boston, Mass.

What to Do With Arson Evidence

By **George O. Q. Mansfield,** ***Chief Fire Inspector, Massachusetts Department of Public Safety***

AT a fire where arson is detected or suspected the evidence must be handled so that it may be used to secure conviction of the incendiary. As soon as photographs have been taken, gather up the trailers or liquids and place them in proper air tight containers. Oily and gasoline-soaked rags and other materials which would evaporate in open containers should be placed in glass jars with rubber seals and screw tops so that the liquids and odors will be retained for examination by the chemist.

If the containers in which the liquids were brought to the premises are found, handle them carefully. Do not place your own fingerprints on these containers, as they will make it more difficult or impossible for the fingerprint expert to find the prints of the fire maker. Handle these articles with gloves, or by strings tied to them. In a case I have in mind it was necessary to fingerprint seven members of the fire department in order to prove that prints found on a glass jug were not those of the firemen who had handled the jug.

Footprints in the soft earth or snow may also be of value in helping to secure convictions. These should be properly protected until photographs or plaster of paris casts can be made of them. This protection can be afforded by placing a wooden box over the prints and stationing a man there to keep people away.

Properly label every suspected article found at a fire with a tag bearing the name of the man who found it and that of the man who turned it over to the prosecuting officer.

During the course of operations at a fire you may overhear conversations of suspected parties, or you may hear some talk among spectators which would be of value in the investigation of the case.

In case of a fire where a sprinkler system failed to operate properly, try to ascertain the cause of failure. It may be that the system had been shut off or tampered with. Cases are known where cork stoppers have been placed in the sprinkler heads, and where flammable liquids were injected into the system so that when the sprinklers functioned, the fire was sprayed with a highly flammable liquid which came out with the water.

It is your duty as firemen to discover material evidence, such as trailers, separate fires, and the presence of flammable liquids. In many states there are state officers who aid cities and towns in the prosecution of arson cases. Coöperate with these trained investigators who are familiar with the rules of evidence, police practice

Part of 250 cardboard cartons found by firemen at an attempted incendiary fire in a small apartment house. They were lined with cellophane and filled with about four gallons of gasoline each.

and procedure. Prosecuting attorneys also have to do a certain amount of investigating work of their own in preparing a case.

In court it must be proven that the building was burned. This may be done by the fire department or others having knowledge of the fire. It is necessary to show the time of the alarm; the identity of the building; the location and surroundings (photographs, of course, being the best evidence); then the ownership; the occupancy or control; and the extent and character of the burning.

It is then necessary to prove that the building was burned by the willful and malicious act of some person, and not as the result of accidental or natural causes.

Thus the way will be open for the introduction of direct or circumstantial evidence that it was the act of the accused, and that it was done with a criminal intent. While the proof of motive may not be necessary or may not be shown, it is unwise not to establish it. The motive may be to collect insurance, to conceal or aid a crime, spite, revenge, or to destroy evidence. Or the blaze may be the work of a pyromaniac, which is the fancy word for "firebug."

If possible, obtain a confession while the suspect is in a frame of mind to talk. The confession should be entirely voluntary, and should be signed by the suspect. However, do not make the case depend upon a confession alone, for many times it will be repudiated by the suspect. Always corroborate a confession by evidence; that is, immediately after the suspect has confessed, take him to the scene and go over the entire situation with him. Have him show how he set the fire, and locate if possible the materials and containers which were used by him. Then there will be no doubt that the confession is true and it will stand in court.

This is the second of a series of two articles by Mr. Mansfield, an experienced fire investigator. The accompanying material is a part of instruction notes he has prepared for the regional fire schools in Massachusetts, of which he is an instructor. The first article, "What to Look for at Arson Fires," appeared in the July issue.

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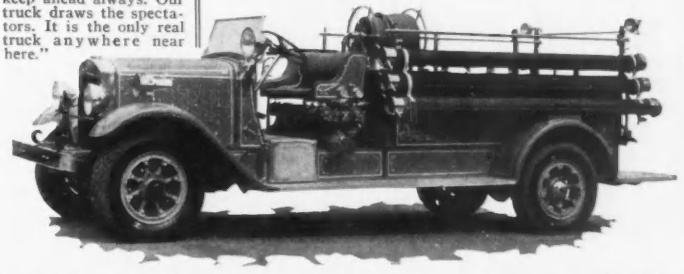

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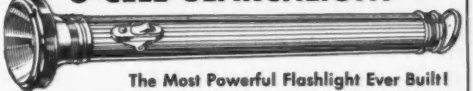

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The Proceedings

of the 1934 Annual Meeting

Atlantic City, N. J.

May 14-17, 1934

The Proceedings is one of the publications which go regularly to N.F.P.A. Members, and is mailed to the headquarters of companies or department members of the Volunteer Firemen's Section in addition to VOLUNTEER FIREMEN, *which each member of the section receives at his home address.*

The Proceedings contains a stenographic record of the business transacted at the Annual Meeting, including the action taken on twenty-eight technical committee reports, covering a wide variety of such subjects as Spontaneous Ignition, Farm Fire Protection, Water Supplies and Building Construction. Reports are included of the activities of the Fire Marshal's, Marine and Volunteer Firemen's Sections. Technical papers presented include "Static Electricity as a Fire Cause," by E. E. Turkington, "Water Supplies for Rural Fire Protection," by P. C. Charnock, "C.C.C. Work in Forest Fire Safety," by Fred Morell, and "The Fire Hazard of Earthquakes," by H. F. Badger. 400 pages of the latest in fire prevention and fire protection. *Free to members only.*

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Useful for Reference or for the Company or Department Library

Order by number. Except where a price is noted, single copies are sent free on request.

A-7. **Safeguarding of Dry Cleaning and Dry Dyeing Plants.**

A-10. **National Electrical Code.** Rules for safe electric wiring.

A-15. **First Aid Fire Appliances.** How all types of fire extinguishers work, and regulations for their installation, maintenance and use.

A-27. **Oil Burning Equipments.** Safe installation rules for burners and storage of fuel.

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B-4. **Suggested Ordinance on Flammable Liquids.** 15¢.

C-1. **Field Practice.** An inspection manual. 206 pages. Pocket size, 4½ x 6¾ inches. $1.50.

C-7. **Prevention and Control of Farm Fires.** A Handbook. 167 pages. 85¢.

D-15. **Fire Department Drill Towers.** 15¢.

D-16. **Fire Department Pumpers,** Their Effective Use and Coordination with Private Fire Protection Facilities, by Frank R. Daniel. 10¢.

D-19. **Fire Prevention Week Handbook.** Suggestions for fire prevention campaigns. 48 pages. 15¢.

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